

REMARKS

Applicants have reviewed carefully the Office Action dated July 2, 2007.

All claims 1-16 stand rejected under USC §102 (e) as being anticipated by the teachings of Iwatani et al. (US 6,512,226, hereinafter “Iwatani”). All rejections are raised under USC §102(e) and no other rejections are raised, including no rejections under USC §101, USC §112 or USC §103. The only issue in this case is whether Iwatani teaches each and every element recited in claims 1-16.

Independent claims 1, 11, and 15 have been amended to include subject matter of originally filed claim 7. Claim 5 has been amended to improve form. Claim 7 has been amended. Claims 17-25 are new. The new claims clarify an aspect of the claimed invention, namely that in one aspect of the claimed invention, an abstract graph is constructed to represent the network topology and allow for the identification of logical access paths and logical access path attribute values. Support for these claims can be found on pages 13-14 of the Specification. No new matter is added.

Applicants appreciate the time and consideration provided by Examiner Sal in the telephonic interview conducted on October 9, 2007. During this interview, Examiner El Hadji Sal, the last named Inventor R. Yahalom, and the Undersigned discussed amending claims 1, 11, and 15 to include certain logical access path attributes earlier recited in original claim 7. Amended claims 1, 11, and 15 have been amended to refer to certain logical access path attributes. For example, claim 1 now refers to a level of end-to-end access path redundancy.

We appreciate the Examiner's indication of a Non-Final Office Action after the filing of this Response. In view of the above amendments and the remarks set forth below, Applicants respectfully submit that the application is in condition for allowance. However, if the Examiner deems issues to remain, Applicants request a Non-Final Action to address those issues.

Applicants have reviewed Iwatani carefully and how that publication was applied to the claimed subject matter and carefully reviewed the sections of Iwatani cited as support, when support

citations were made. We also considered the remarks and comments the Examiner offered during the telephonic interview.

Applicants submit that the claimed subject matter recited in the amended claims 1-25 includes many features absent from the teachings and disclosure of Iwatani.

Specifically, amended claim 1 recites subject matter of originally filed claims 1 and 7, and includes a process having the steps of processing the collected configuration information to identify the SAN logical access paths, and computing the associated attribute values, and comparing the identified SAN logical access paths and computed attribute values with the SAN access path policy to identify any logical path discrepancies or violations.

Iwatani's failure to disclose attributes of logical access paths prevents Iwatani from being used as a reference against the subject matter of the canceled claim 7, now included in amended claim 1. Claim 7, explicitly recited a process wherein a logical access path attribute comprises an attribute selected from the group consisting of level of redundancy, type of redundancy, number of hops, number of allocated ports, bandwidth, component interoperability, proximity constraints, and type of component authentication. Nothing in Iwatani teaches this notion of logical access path attributes. Importantly, Applicants note that the rejection of claim 7 of the instant Office Action lacks any supporting citation for the proposition that Iwatani does teach logical access path attributes. Applicants note, without conceding the correctness of any other rejections, that the rejection of claim 7 is the only rejection that lacks a supporting citation. Applicants have reviewed the Iwatani patent and find no teaching of access path having attribute values such as the attribute values set out in original claim 7, now included in part in amended claim 1. In particular, the attribute of end-to-end access path redundancy is markedly different from conventional component redundancy and represents the fact that there are many independent routes (each consisting of multiple devices and configurations) by which an application on a host can access data on a storage device. The Iwatani patent does not include any such attribute of an end-to-end access path redundancy.

Thus, Iwatani does not include any notion of attributes of logical access paths such as a level of redundancy for an access path, nor does the Iwatani patent disclose any way to compute, analyze, or validate such attributes of logical access paths. As such, the subject matter of claim 1 now amended to include subject matter of originally filed claim 7 clearly distinguishes over the teachings of Iwatani.

It is important to note that Iwatani's failure to disclose logical access path attributes presents a significant gap between its disclosure and the claimed subject matter. Logical access path attributes determine the characteristics of the access to the stored data, such as the response times, risk of data becoming unavailable, etc. An example of such access path attribute is level of redundancy. However analyzing a storage area environment to determine that at any point in time all the attributes (such as level of redundancy) of each access path hold as required is a difficult challenge.

Consider for example an erroneous local configuration change at a device which results in a lack of redundancy of a logical access path from a host to a storage volume. Such a violation may not have an immediate noticeable impact on the applications and users because data can still flow via the non-redundant access path. However, as other paths may become unavailable later, early detection and analysis of such an outcome is critical from a risk mitigation and performance perspective.

Iwatani does not teach or suggest systems, methods, or processes for dealing with these types of challenges. Iwatani only deals with scenarios in which configuration information is transmitted to devices from a central integrated management mechanism 410 (see Figure 1 or 5 in Iwatani), and in which a device fails and is replaced and reconfigured in a way which is identical to the previous device configuration and so results in the same access paths.

Furthermore, as recited in claim 1, the access paths are logical access paths that define an end-to-end access relationship between an application on a server and a data LUN. The Examiner correctly noted that Iwatani discloses a storage area network that has an integrated management

system that defines access paths. But Iwatani's access paths are not the claimed end-to-end access relationships between an application on a server and a data LUN. Instead, Iwatani's access paths are the discrete number of access routes from the integrated management mechanism (500) to a region (415) of storage space on a storage device (410) (see Figure 1 and 5 of Iwatani). These access paths are controlled by the integrated management mechanism (500) such that every communication from the host to a storage device must occur through an access route set up and controlled by the integrated management mechanism (see column 2, lines 13-21, and column 3, lines 17-45 of Iwatani). Thus, Iwatani only describes access paths that are paths through the storage area network. Nothing in Iwatani extends the access path back to the application on the server, as the Applicants presently teach and claim. Further, nothing in Iwatani teaches or describes a system or method that sets up a policy that Iwatani's system administrator is to follow when setting up one of Iwatani's access paths. Any path the system administrator wants to set up, will be set up and accepted by the system or method of Iwatani. Thus, Iwatani lacks any teaching of an access path policy as recited in Applicants' claimed subject matter.

Consequently, Iwatani fails to disclose each and every element of claim 1. Therefore, the 35 USC § 102(e) Rejection of claim 1 should be withdrawn (see MPEP § 706.02).

For at least the reasons cited above, the 35 USC § 102(e) Rejections of claims 11 and 15 should also be withdrawn. Since claims 2-10, 12-14, and 16-25 depend on, and add limitations to, the independent claims 1, 11, and 15, the 35 USC § 102(e) Rejections of these claims should be withdrawn, too.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

Applicants believe no fee is due with this Response other than those indicated on the attached Fee Transmittal. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 18-1945 under Order No. ONAR-P01-001, and please credit any excess fees to such deposit account, from which the undersigned is authorized to draw.

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Respectfully submitted,

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